📘 Study Unit: Establishing Standard

🌞 Overview

Standard costing involves estimating manufacturing costs—such as direct materials, direct labor, and manufacturing overhead—in advance under efficient operating conditions. These estimates, known as **standard costs**, **budgeted costs**, or **planned costs**, represent what costs *should be* rather than what they necessarily *will be*. This approach empowers management to control operations, evaluate performance, and identify deviations through variance analysis.

Establishing standards means setting predetermined or budgeted costs for materials, labor, and overhead under normal operating conditions. These serve as benchmarks for measuring performance, controlling costs, and evaluating efficiency. Standard costing is a projection of cost accounts and forms part of budgetary control, providing a clear framework for planning and decision-making. It is a management-by-exception tool, focusing on significant variances while allowing routine operations to proceed without constant oversight.

In practice, standards are compiled using the best available information, often into a comprehensive standards table that outlines expected costs and usage rates for each input. For instance, a manufacturer like DenimWorks might set 2024 standards including $3 per yard of denim, $10 per direct labor hour, and overhead rates based on labor hours.accountingcoach.com

🧮 Key Concepts

Term	Meaning
Standard Input	Quantity of input (e.g., material pounds, labor hours) needed per unit of output under efficient conditions.
Standard Price	Expected price to pay per unit of input, based on market rates, volume discounts, and supplier terms.
Standard Cost	Total cost to produce one unit = Σ(Standard Input × Standard Price) + Allocated Overhead. Represents the "should be" cost for valuation and control.

Example: Direct material standard = 3 lbs × $5/lb = $15 per unit. For a more detailed case, consider direct materials like denim: 1.6 yards per large apron at $3/yard = $4.80 standard cost per apron.accountingcoach.com

Standards are applied to production for inventory valuation under absorption costing, where applied overhead becomes part of product costs until goods are sold and transferred to COGS.

🏭 Role and Purpose of Standard Costing

Standard costing plays a pivotal role in cost management by applying costs to production, supporting budgeting, and enabling performance evaluation. It facilitates **variance analysis**, which compares actual results to standards to pinpoint inefficiencies, savings, or issues.

Purpose	Description
Planning	Provides clear cost expectations for budgeting, forecasting, and pricing decisions.
Control	Identifies variances (actual vs. standard) to detect and correct deviations early.
Motivation	Sets achievable targets to encourage efficiency and innovation among employees.
Performance Evaluation	Measures effectiveness of responsibility centers (e.g., departments) against benchmarks.
Decision-Making	Informs cost-reduction strategies, product mix, and resource allocation.

It is essential for flexible budgeting and aligns with continuous improvement philosophies like Kaizen.

⚙️ Methods for Setting Standard Costs

Standards must be realistic, attainable, and periodically updated—neither too strict (demotivating) nor too lenient (ineffective). They are developed using one or more methods, often in combination for accuracy.

Method	Description	Pros	Cons
1. Activity Analysis (Most Accurate)	Involves engineers, accountants, and production workers analyzing processes. Specifies material type/quantity/quality, labor skills/efficiency, equipment, and processes. Includes steps like product standardization, study, specification lists, and test runs.	Highly precise and tailored.	Time-consuming and resource-intensive.
2. Historical Data	Based on past cost performance, adjusted for improvements.	Easy, inexpensive, and readily available.	May perpetuate inefficiencies or outdated practices.
3. Target Costing	Starts with market price minus desired profit to derive allowable cost; standards are set to achieve this target.	Market-driven and competitive.	Requires strong market forecasting.
4. Strategic Decisions	Reflects management strategies, such as adopting Kaizen for continuous improvement or new technology.	Aligns with long-term goals.	Subjective and forward-looking.
5. Benchmarking	Compares with best industry practices, top performers, or similar-sized firms. Adjust for company specifics like scale. Identifies gaps and sets realistic targets.accountingcoach.com	Promotes external best practices.	Invalid if comparators differ in operations or size (e.g., larger firms' economies of scale skew results).

Additional Steps in Method Application: For materials and labor, begin with product standardization (decide what/how much to produce), followed by product study (analyze production feasibility), preparation of specification lists (detail types, quantities, wastage), and test runs to validate and refine. Update standards annually or when conditions change (e.g., inflation, tech upgrades).

🧩 Types of Standards

Standards vary by tightness and usage horizon to suit motivational and reporting needs.

Type	Description	Purpose	Suitability
Ideal (Theoretical) Standards	Assume perfect efficiency—no waste, downtime, or errors.	Push for maximum performance and highlight improvement potential.	Often unrealistic; can demotivate if unattainable.
Currently Attainable Standards	Reflect efficient operations with normal losses, downtime, and human factors.	Balance motivation with realism; ideal for daily control.	Preferred for CMA contexts to encourage steady progress.
Basic Standards	Fixed for long periods as a stable comparison base.	Track long-term trends and inflation effects.	Not for short-term variance analysis.

Continuous Improvement (Kaizen Standards): Kaizen ("change for the better") integrates gradual enhancements, revising standards downward as efficiencies improve (e.g., via new tech reducing labor hours). This fosters innovation, teamwork, and waste reduction. Example: If a process cuts labor by 10%, adjust the standard to reflect the new norm, raising the bar for future performance.accountingcoach.com

🚫 Avoid unrealistic or overly easy standards, as they fail to motivate or control effectively.

👷 Participants and Approaches in Setting Standards

Setting standards requires cross-functional collaboration, with top management providing strategic oversight but not direct development—it's an operational tool.

Personnel/Role	Responsibilities
Industrial Engineers	Determine standard quantities, times, methods (e.g., time/motion studies), and processes.
Budgetary Accountants	Convert physical standards (e.g., hours) into monetary costs per unit.
Quality Control Personnel	Define quality levels, tolerances, and performance specs to minimize waste.
Supervisors/Employees	Offer practical input from shop-floor experience for realism.
HR Department	Set wage rates based on market data, contracts, and skills.
Top Management	Approves standards, aligns with strategy; least involved in details.
Other Departments	Marketing (demand forecasts), Engineering (design specs), Production (feasibility), Accounting (cost integration).

Approach	Description	Benefits	Limitations
Authoritative	Top-down from management.	Fast, uniform across organization.	Low buy-in; may ignore practicalities.
Participative	Involves workers/supervisors in development.	High acceptance, realistic, boosts motivation.	Slower; risk of bias toward leniency.
Consultative	Management decides after soliciting input.	Balanced speed and practicality.	Potential dissatisfaction if input is overlooked.

💡 **Best Practice:** Even in authoritative systems, incorporate employee input for better accuracy, acceptance, and Kaizen alignment. Training and trial runs ensure worker readiness.

🧱 Establishing Direct Material Standards

Direct materials are traceable raw inputs (e.g., steel, fabric). Standards ensure optimal quality and usage.

Steps:

1. **Quality Standard:** Select grade affecting usage, waste, supervision, and time (e.g., high-grade reduces spoilage but raises price).
2. **Quantity Standard:** Based on design specs, equipment efficiency, process conditions, and expected wastage. Use test runs to validate.
3. **Price Standard:** Set last, factoring purchase timing, volume discounts, supplier reliability, and market fluctuations.

Formula: Standard Material Cost per Unit = Standard Quantity × Standard Price.

Example: For aprons, 1.6 yards of denim at $3/yard = $4.80 per large apron. If actual purchase is 1,000 yards at $2.90/yard, this informs future price adjustments.accountingcoach.com

Departments Involved: Marketing (demand), Engineering (specs), Production (usage), Accounting (pricing).

🧵 Establishing Direct Labor Standards

Direct labor is traceable effort on products (e.g., sewing, assembly). Standards account for skills and efficiency.

Determinants: Type of work, manufacturing process, equipment, and skill level.

Components:

Type	Determined By	Explanation
Quantity Standard (Hours)	Industrial engineers, production, unions, HR, accountants. Includes time/motion studies for optimal methods and trial training.	Standard hours allowed per unit, adjusted for learning curves.
Price Standard (Wage Rate)	HR	Market rates, contracts, incentives.
Cost Standard	Accountants	Wages + benefits + payroll taxes (e.g., Social Security, Medicare).

Fringe Benefits Allocation: These (health insurance, retirement, taxes) are manufacturing costs for production workers. Options:

- Include in direct labor standards, or
- Allocate 100% to manufacturing overhead. 🚫 Never to administrative expenses. Impact is minor unless labor dominates total costs.accountingcoach.com

Example: 0.3 hours per apron at $10/hour = $3 standard labor cost. Time/motion studies might reveal a best-practice sequence reducing this to 0.25 hours post-training.

⚙️ **Establishing Manufacturing Overhead Standards**

Manufacturing Overhead (MOH): Indirect costs not directly traceable (e.g., utilities, supervision).

Type	Examples	Behavior
Indirect Materials	Cleaning supplies, lubricants.	Variable (with volume).
Indirect Labor	Supervisors, maintenance.	Variable or fixed.
Other Indirect Costs	Depreciation, rent, insurance.	Mostly fixed.

Classification:

- **Variable Overhead (VOH):** Varies with production (e.g., electricity).
- **Fixed Overhead (FOH):** Constant in relevant range (e.g., rent). Budget separately.

Predetermined (Standard) Overhead Rate:

Predetermined OH Rate=Budgeted Factory OH CostsPredetermined Activity Level\text{Predetermined OH Rate} = \frac{\text{Budgeted Factory OH Costs}}{\text{Predetermined Activity Level}}Predetermined OH Rate=Predetermined Activity LevelBudgeted Factory OH Costs

Common bases: Direct Labor Hours (DLH) or Machine Hours (MH).

Steps to Calculate:

1. Budget total fixed and variable OH for the year.
2. Select allocation base (e.g., DLH).
3. Estimate total standard activity (e.g., units × hours/unit).
4. Divide budgeted OH by activity for rate per hour.
5. Apply: Rate × Standard Hours per Unit = OH per Unit.

For VOH, link to engineering specs or labor hours; for FOH, use budgeted volume and practical capacity.

Example — Variable Overhead: Budgeted VOH = $150,000; Planned units = 1,000; Standard = 2 DLH/unit. Activity Level = 1,000 × 2 = 2,000 DLH. VOH Rate = $150,000 / 2,000 = $75/DLH. VOH per Unit = 2 × $75 = $150 (or directly $150,000 / 1,000 = $150/unit).

For a detailed case: Variable rate = $2/DLH; if actual hours exceed standard by 8, this flags inefficiency.accountingcoach.com

Example — Fixed Overhead: Budgeted FOH = $100,000; Budgeted units = 10,000 → $10/unit. If actual production = 8,000 units, FOH/unit rises to $12.50 (underabsorption). Annual fixed rate (e.g., $4/DLH based on $8,400 rent over expected hours).accountingcoach.com

Planning & Allocation Differences:

Overhead Type	Budgeting Method	Rate Basis
Variable OH	Rate × Activity	Changes with volume.
Fixed OH	Total ÷ Capacity	Per-unit varies inversely with volume.

Denominator-Level (Capacity) Concepts:

Type	Category	Description	Best For
Theoretical/Ideal Capacity	Supply-based	Max output, zero downtime.	Motivation (unrealistic).
Practical (Attainable) Capacity	Supply-based	Adjusted for normal downtime (e.g., 80-85% of ideal).	Operational planning.
Master Budget (Expected) Capacity	Demand-based	Based on sales forecasts.	Budgeting & variances.
Normal Capacity	Demand-based	Long-term average activity.	GAAP external reporting.

Key Formula Recap:

Type	Formula
Predetermined OH Rate	Budgeted OH ÷ Budgeted Activity
VOH per Unit	Rate × Standard Hours/Unit
FOH per Unit	Total FOH ÷ Budgeted Units

Notes: OH is *applied* (not incurred directly) to WIP. Under absorption, it stays in inventory until sale. Use separate rates for VOH/FOH; flexible budgets handle volume changes.

📓 Budgets and Standards

Type	Description	Use
Static Budget	Fixed at planned activity using standards.	Initial expectations.
Flexible Budget	Adjusted for actual activity but holds standards.	Efficiency analysis & variances.

Variance analysis uses flexible budgets to isolate volume effects from efficiency.

💡 Summary Tables

Quick Overview of Standards:

Standard Type	Basis	Determined By	Includes
Direct Material	Quality × Quantity × Price	Engineering, Production, Accounting	Type, usage, cost; wastage allowances.
Direct Labor	Hours × Wage Rate	Engineers, HR, Accountants	Wages, benefits, taxes; time studies.
Variable OH	Budgeted VOH ÷ Activity	Accountants	Indirect materials, utilities.
Fixed OH	Budgeted FOH ÷ Units	Accountants	Rent, depreciation, salaries.

Fringe Benefits Reminder: Always manufacturing costs; allocate fully to production.

🧠 Key Takeaways for CMA Exam

Concept	Remember
Who Sets Standards	Operational teams (engineers, accountants, QC)—top management approves only.
Continuous Improvement	Kaizen: Revise standards tighter over time for ongoing gains.
Benchmarking	Compare similar firms/divisions; adjust for scale.
Fringe Benefits	100% to manufacturing (labor or OH).
Standard Levels	Use "currently attainable" for motivation & control.
Capacity for Reporting	Normal for GAAP; expected for budgeting/variances.
Best Practice	Update regularly; participative for buy-in; test runs for validation.

📘 Summary Snapshot

Core Purpose: Estimate "should be" costs for efficient control, budgeting, and evaluation. **Key Outcome:** Realistic standards drive cost management, performance insights, and continuous improvement. **Pro Tip:** Integrate methods like activity analysis with benchmarking for robust, adaptable standards—essential for CMA success in variance and budgeting scenarios.